

Appendix table 7-15

Correct answers to questions about charts and statistics, reasoning/life sciences, and understanding of experiment/controlling variables, by respondent characteristic: 2008

(Percent)

Characteristic	Charts and statistics		Reasoning/life sciences	
	<i>Day-night rhythms dramatically affect our bodies. Probably no body system is more influenced than the nervous system. The figure on Card 3 illustrates the number of errors made by shift workers in different portions of the 24-hour cycle. Based on the data illustrated in the figure, during which of these time periods did the most errors occur?</i>	<i>As part of a laboratory experiment, five students measured the weight of the same leaf four times. They recorded 20 slightly different weights. All of the work was done carefully and correctly. Their goal was to be as accurate as possible and reduce error in the experiment to a minimum. Which of the following is the BEST method to report the weight of the leaf?<sup>a</sup></i>	<i>The two objects shown on Card 1 have the same mass, but object B loses heat more quickly than object A. Which combination of bodily features would be BEST suited to a small animal that lives in a cold climate and needs to minimize heat loss?<sup>b</sup></i>	<i>A gardener has an idea that a plant needs sand in the soil for healthy growth. In order to test her idea she uses two pots of plants. She sets up one pot of plants as shown on the top part of Card 4. Which one of the pictures on the bottom part of the card shows what she should use for the second pot?<sup>c</sup></i>
All adults ( <i>n</i> = 1,727)	74	66	50	51
Sex				
Male ( <i>n</i> = 796)	77	69	55	49
Female ( <i>n</i> = 931)	72	64	46	52
Formal education				
<High school ( <i>n</i> = 244)	49	38	23	41
High school graduate ( <i>n</i> = 573)	72	59	44	50
Some college ( <i>n</i> = 465)	80	73	53	48
Baccalaureate ( <i>n</i> = 289)	88	82	73	58
Graduate/professional ( <i>n</i> = 156)	85	79	68	64
Science/mathematics education <sup>e</sup>				
Low ( <i>n</i> = 1,056)	68	57	41	46
Middle ( <i>n</i> = 284)	86	77	60	56
High ( <i>n</i> = 316)	90	88	76	62
Family income (quartile) <sup>f</sup>				
Top ( <i>n</i> = 309)	87	79	67	56
Second ( <i>n</i> = 412)	78	73	56	54
Third ( <i>n</i> = 377)	77	67	49	51
Bottom ( <i>n</i> = 462)	63	52	36	43
Age (years)				
18–24 ( <i>n</i> = 151)	76	69	49	47
25–34 ( <i>n</i> = 291)	78	72	52	50
35–44 ( <i>n</i> = 310)	75	69	49	51
45–54 ( <i>n</i> = 358)	79	67	53	51
55–64 ( <i>n</i> = 289)	77	70	57	51
≥65 ( <i>n</i> = 317)	61	47	40	52
Verbal ability <sup>g</sup>				
0–4 ( <i>n</i> = 304)	48	45	26	33
5 ( <i>n</i> = 249)	68	59	38	38
6 ( <i>n</i> = 302)	83	69	54	53
7 ( <i>n</i> = 245)	86	74	60	55
8–10 ( <i>n</i> = 317)	87	80	71	66
Understanding of probability <sup>h</sup> ( <i>n</i> = 1,727)	84	77	59	59
Understanding of experiment <sup>h</sup> ( <i>n</i> = 1,727)	89	83	66	62

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(Percent)

Characteristic	Experiment/controlling variables			Experimental index <sup>d</sup>
	<i>A gardener has an idea that a plant needs sand in the soil for healthy growth. In order to test her idea she uses two pots of plants. She sets up one pot of plants as shown on the top part of Card 4. Which one of the pictures on the bottom part of the card shows what she should use for the second pot?<sup>c</sup></i>	<i>A student wants to find out if temperature affects the behavior of goldfish. He has 4 fish bowls and 20 goldfish. Which of the experiments on Card 2 should he do?</i>	<i>Card 5 shows a picture of lights shining above 4 fish bowls. The water temperature in all 4 bowls is 25 degrees Celsius. There are 8 fish in one bowl; 6 in another; 4 in another; and 2 in another. What is the scientist trying to find out from this experiment? (Follow-up question) Why did you choose that answer?</i>	
All adults ( <i>n</i> = 1,727)	51	57	29	46
Sex				
Male ( <i>n</i> = 796)	49	59	30	46
Female ( <i>n</i> = 931)	52	55	28	45
Formal education				
<High school ( <i>n</i> = 244)	41	32	6	26
High school graduate ( <i>n</i> = 573)	50	52	20	41
Some college ( <i>n</i> = 465)	48	60	29	46
Baccalaureate ( <i>n</i> = 289)	58	76	53	62
Graduate/professional ( <i>n</i> = 156)	64	73	52	63
Science/mathematics education <sup>e</sup>				
Low ( <i>n</i> = 1,056)	46	47	17	37
Middle ( <i>n</i> = 284)	56	72	41	56
High ( <i>n</i> = 316)	62	81	60	67
Family income (quartile) <sup>f</sup>				
Top ( <i>n</i> = 309)	56	76	45	59
Second ( <i>n</i> = 412)	54	64	38	52
Third ( <i>n</i> = 377)	51	55	19	42
Bottom ( <i>n</i> = 462)	43	45	17	35
Age (years)				
18–24 ( <i>n</i> = 151)	47	69	28	48
25–34 ( <i>n</i> = 291)	50	63	36	50
35–44 ( <i>n</i> = 310)	51	58	30	46
45–54 ( <i>n</i> = 358)	51	61	33	49
55–64 ( <i>n</i> = 289)	51	61	29	47
≥65 ( <i>n</i> = 317)	52	31	14	33

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Correct answers to questions about charts and statistics, reasoning/life sciences, and understanding of experiment/controlling variables, by respondent characteristic: 2008

(Percent)

Experiment/controlling variables				
	<i>A gardener has an idea that a plant needs sand in the soil for healthy growth. In order to test her idea she uses two pots of plants. She sets up one pot of plants as shown on the top part of Card 4. Which one of the pictures on the bottom part of the card shows what she should use for the second pot?<sup>c</sup></i>	<i>A student wants to find out if temperature affects the behavior of goldfish. He has 4 fish bowls and 20 goldfish. Which of the experiments on Card 2 should he do?</i>	<i>Card 5 shows a picture of lights shining above 4 fish bowls. The water temperature in all 4 bowls is 25 degrees Celsius. There are 8 fish in one bowl; 6 in another; 4 in another; and 2 in another. What is the scientist trying to find out from this experiment? (Follow-up question) Why did you choose that answer?</i>	<i>Experimental index<sup>d</sup></i>
Characteristic				
Verbal ability <sup>a</sup>				
0–4 ( <i>n</i> = 304)	33	36	8	26
5 ( <i>n</i> = 249)	38	43	12	31
6 ( <i>n</i> = 302)	53	62	28	48
7 ( <i>n</i> = 245)	55	68	40	54
8–10 ( <i>n</i> = 317)	66	75	52	64
Understanding of probability <sup>h</sup> ( <i>n</i> = 1,727)	59	67	38	55
Understanding of experiment <sup>h</sup> ( <i>n</i> = 1,727)	62	76	48	62

<sup>a</sup>Question asked of 2,021 survey respondents. All other questions asked of 1,727 respondents.<sup>b</sup>Respondent can reach correct answer through both reasoning and knowledge of life sciences. Picture on card 1 gives away answer, so a respondent who does not know the answer from knowledge of life sciences can reason it through from picture clues and reach correct answer.<sup>c</sup>Question included under both reasoning/life sciences and experiment/controlling variables because correct answer can be reached by either method.<sup>d</sup>Percentage of questions in "Experiment/controlling variables" group answered correctly.<sup>e</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses. Categories do not add to total *n* because "don't know" and "refused" responses not shown.<sup>f</sup>Categories do not add to total *n* because "don't know" and "refused" responses not shown.<sup>g</sup>Measure based on correct responses to a 10-item, multiple-choice test of vocabulary knowledge completed by 1,417 survey respondents. Categories represent number of correct responses.<sup>h</sup>See footnotes to appendix table 7-13 for explanation of understanding of probability and experiment.NOTES: *n*'s lower than in other tables for all questions except one (see footnote a) because show cards could not be administered to subset of survey respondents interviewed by telephone. All questions multiple choice. "Don't know" responses and refusals to respond count as incorrect. For complete questions, see appendix table 7-17.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2008).

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